

NOTES ON HIGHLAND DIPTERA, WITH
DESCRIPTIONS OF SIX NEW SPECIES.

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THE following notes are based on collections made during a holiday in Perthshire and Inverness in June 1931, and are contributed at the suggestion of my friend, Mr P. H. Grimshaw. Only the more interesting captures are noted.

MYCETOPHILIDÆ.

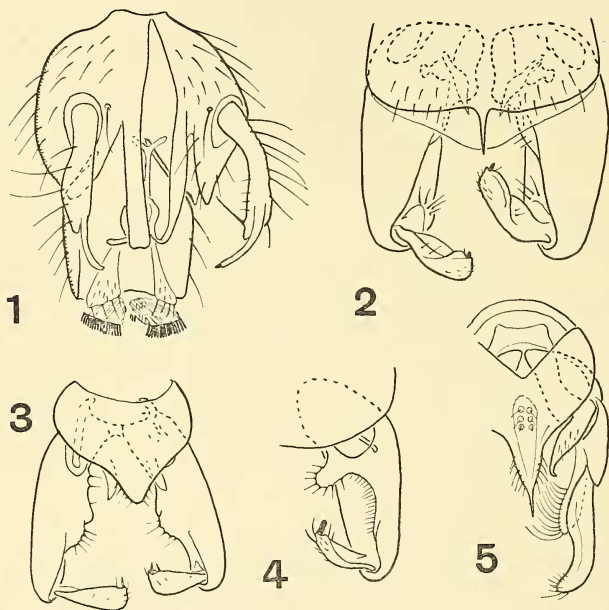
Bolitophila disjuncta, Lw., was common in the woods at the lower end of Glen Roy, and was also taken at Aviemore.

Bolitophila spinigera, Edw. One female of this little-known species was taken at Rannoch.

Gnoriste trilineata, Zett. This was recorded as British by the late Mr F. Jenkinson, from a specimen collected by Dr C. G. Lamb at Nethy Bridge in 1905, and no additional captures have been made in this country since that date. On the last day of our stay at Rannoch I succeeded in obtaining three specimens in a small ravine in Dunalastair Park; the following day Messrs W. H. T. Tams and R. B. Benson revisited the same spot and obtained fifteen additional specimens. In confirmation of the supposition that *G. bilineata*, Zett. is a synonym of *G. trilineata*, it may be mentioned that the median thoracic stripe is sometimes faintly marked in the female sex. It may further be noted that there is a sexual difference in the wings, the males nearly all having a distinct darkening of the wing-tip which is not present in any of the females; in this respect they resemble *G. apicalis*, Mg., but have a longer rostrum.

Boletina grænlandica, Staeg. A pair on Ben Alder. This is an addition to the British list; it is a large species without pleurotergal hairs, differing from all the other British species of the genus in the completely black hind coxæ.

Boletina pectinunguis, sp.n. ♂. A rather large black species, without yellow on shoulders or abdomen; antennæ with second scapal and first flagellar segments mainly yellowish, former darkened above, latter at tip, second and following flagellar segments all black; all coxæ and femora entirely yellow, as well as palpi, halteres, and tibial spurs. Shoulders slightly greyish. Pleurotergites with numerous



hairs. All claws alike, broad, blunt-tipped, and finely pectinate beneath (as in *B. basalis* and *B. winnertzi*, but somewhat less enlarged). Hypopygium (fig. 1) resembling that of *B. basalis*, but differing in detail; three pairs of anal combs. Wings with normal venation; *Sc* 2 present; costa moderately produced. Wing-length 4 mm.

Loch Ericht, 1 ♂. This new species is so evidently nearly related to *B. basalis* that it is obvious that the presence of pleurotergal hairs cannot be regarded as a subgeneric character in *Boletina*. Another species with a very similar hypopygium is *B. digitata*, Lundst.; this, however, has unmodified claws as well as bare pleurotergites.

CHIRONOMIDÆ.

Protanypus morio (Zett.). Fairly common by Loch a Bhealaich Beithe (Ben Alder), also by Loch Ericht.

Syndiamesa pilosa, Kieff. One male on Ben Alder.

Diamesa arctica (Boh.), Edw. Loch Einich and Loch Laidon. This differs from the common *D. culicoides* in the shape of the pruinulent areas in front of the scutellum; in my revision of the British Chironomidæ it was recorded as *D. waltli*, Mg.; but according to Goetghebuer (in letter) Meigen's species is different. Whether it is correctly determined as *D. arctica* is uncertain.

Diamesa incallida (Walk). Rothiemurchus Forest; two pairs taken *in copula* on tent roof. Previously only recorded from the Cornish coast.

Diamesa latitarsis (Goet.), Edw. Rothiemurchus Forest and Loch Laidon. This again differs from the related *D. incallida* in the form of the pruinulent markings of the scutum.

Diamesa parva, sp.n. A small species of Group C, but with the wings less conspicuously milky-white than in the other species of this group. Body and legs all black in both sexes, also antennæ (including plume) and palpi. Antennæ in ♀ 8-segmented, last segment not longer than preceding two; A.R. in ♂ only 0.9-1.1. Thorax scarcely shining, with slight pruinulence not forming definite stripes; dorso-central hairs uniserial throughout, very few in front of scutellum. Hypopygium (fig. 2) somewhat resembling that of *D. montium*, Edw. and *D. campestris*, Edw., but with rather differently-shaped style and fine, bare, anal point. Front tarsi of ♂ without beard; fourth tarsal segment in both sexes very little constricted beyond middle, broadest at tip. Wings with normal venation. Halteres yellow. Wing-length 2.7-3 mm.

Loch Einich, 1 ♂ (type). Also near summit of Pen-y-Ghent, Yorkshire, vii., 1930, 4 ♂ 1 ♀ (F.W.E.). This is the smallest British species, and also differs from the other bare-eyed species (Groups B and C) in the low antennal ratio.

Cricotopus laricomalis,¹ sp.n. Belongs to Group A (*i.e.*, with milky wings and small pulvilli present), but differs from the other British species of the group in its much smaller size. Palpi of normal length, not shortened.

♂. Body entirely black, including shoulders, pleuræ and hypopygium; even halteres darkened; abdomen slightly and uniformly shining. A.R. nearly 2. Legs black, tibial rings indistinct or absent; in one specimen the mid-tibial ring is fairly distinct but narrow. Hypopygium (fig. 4) somewhat as in *C. bicinctus*, Mg. Costa not produced; *An* ending opposite *fCu*, or not much beyond.

♀. Ground-colour of scutum yellow, stripes separate; scutellum yellow. Abdomen dark, unbanded, cerci whitish. Tibial rings all distinct, white, occupying rather over half length of tibia. Halteres yellow. Wing length 2 mm.

Loch Kinardochy (north of Glen Lyon), 3♂ 1♀. This is closely related to *C. glacialis*, Edw. of Spitzbergen and Iceland, but differs somewhat in the hypopygium.

Spaniotoma (Smittia) submontana, sp.n. Belongs to Group C (*i.e.*, with bare eyes, small pulvilli, costa ending at tip of *R*₅, *An* long and curved down apically); superficially resembling *S. stercoraria*, but differing in its pale halteres and form of ♂ hypopygium and ♀ antenna. Body dull black, shoulders and pleural membrane yellowish in ♂. Antennæ in ♂ with whitish plume, A.R. about 1.5, tip blunt and finely pubescent; in ♀ with segments 1 and 6 black, 2-5 whitish, 6 as long as 2-5 together, densely pubescent for its whole length, without longer apical hair, sense-bristles of 3-5 hair-like. Hypopygium (fig. 3) with tergite produced into a broad point. Femora dark, tibiæ and tarsi mainly pale; L.R. in ♂ 0.65, in ♀ 0.5; last two tarsal segments subequal in ♂, fourth somewhat shorter than fifth in ♀; pulvilli not much shorter than claws, empodium longer. Wings very strongly milky, all veins white, stem-vein scarcely darkened even in ♂, squama white, bare as usual. *R*₂+3 very faint, only indicated in ♂ by a groove; costa ending abruptly at tip of *R*₅ in ♂, very

¹ *Larus*, sea-gull; *comes*, associate. Loch Kinardochy is a breeding place of gulls.

slightly produced in ♀, in both sexes ending above or just beyond level of tip of *Cu* 1; *Cu* 2 strongly bent beyond middle; *An* reaching far beyond *fCu* (but not reaching margin), somewhat bent down apically; lobe somewhat produced. Halteres yellowish, somewhat darker in ♂. Wing-length 2 mm.

Ben Nevis, by shore of Lochan Meall an t' Suidhe, 1 ♂ 1 ♀. The species was moderately common, flying in company with *S. (Psectrocladius) limbatellus*, Holmgren; it was mistaken at the time of observation for *S. stercoraria*, but as the locality seemed an unusual one for this latter species a pair was preserved and proved to be new. On account of the evanescent vein, *R*2+3 *S. submontana* might almost equally well be placed in the subgenus *Eukiefferiella*.

Chironomus (Microtendipes) caledonicus, sp.n. Body entirely shining black in both sexes, except that the scutellum is brownish in ♀; femora and tibiæ all black, the former narrowly pale at base; tarsi with first segment mainly whitish, rest dark. A.R. under 1.5; antenna of ♀ 6-segmented (2 not completely divided). Hypopygium (fig. 5) of very distinctive form, with style sinuous and appendage 1 long and beaked; appendage 2a absent. L.R. under 1.5; tibial spurs and pulvilli normal for the subgenus. Wings faintly milky; *R*2+3 running parallel with *R*1 throughout, not more approximated to *R*1 at tip as in most of the other species. Halteres yellowish. Wing-length 3.5 mm. (♂)—4.5 mm. (♀).

Loch Pityoulish, Aviemore, 3 ♂ 2 ♀. A very distinct species, though with much superficial resemblance to *C. (Paratendipes) albimanus*, Mg., from which it differs in the presence of pulvilli and the single tibial spur, as well as in the hypopygium.

CERATOPOGONIDÆ.

Stilobezzia sharpi, Edw. One male in Glen Nevis.

Bezzia (Probezzia) decincta, sp.n. ♀ Allied to *B. bicolor*, Pz., which it resembles in the short antennæ, absence of femoral spines, and general scheme of colouring, but differs as follows:—Thorax as seen from in front less extensively

grey; median stripe distinctly divided by a narrow but continuous pale line. Abdomen less clear white, with a faintly indicated dark median stripe. Hind femora entirely blackish, without any trace of the yellow subapical ring which is conspicuous in *B. bicolor*. Wings rather less milky.

Loch Morlich, 7 ♀♀, among herbage by western shore, in company with *B. bicolor*, Panz., *B. nobilis*, Winn., and two or three other species of the genus. It is possible that this may be merely a colour variety of *B. bicolor*, but it appears very distinct.

SIMULIIDÆ.

Simulium hirtipes Fries. This seems to be very local in its occurrence in the Aviemore district. We did not meet with it in Glen Einich, but it was abundant at the edge of the forest by the north end of the Lairig Ghru. At this place we succeeded in obtaining a number of pupæ and a few larvæ among moss on stones and also on blades of grass at the sides of the stream. The pupæ agree with the typical Norwegian form described by Puri in having 16 branches to the respiratory organs, not 50-60 as in the American species which was determined by Malloch as *S. hirtipes*. Enderlein's *S. nigripes*, based partly on Scottish specimens, is a synonym of *S. hirtipes*.

TIPULIDÆ.

Tipula macrocera, Zett. There are few British records of this species, and it was therefore surprising to find it occurring in great abundance on Ben Alder at a height of about 2500 ft. to 3000 ft. Near the lower limit of its range it was flying in company with the rather similar *T. subnodicornis*, Zett. A single specimen was also taken in the black wood at Rannoch.

Tipula excisa, Schum. Common on the western side of Ben Nevis between 2000 and 3000 ft., but not seen lower or higher, and not found on any of the other mountains climbed. All the specimens examined (at least fifty) were males; a special search was made for females because, so far as I am aware, none have yet been found in this country.

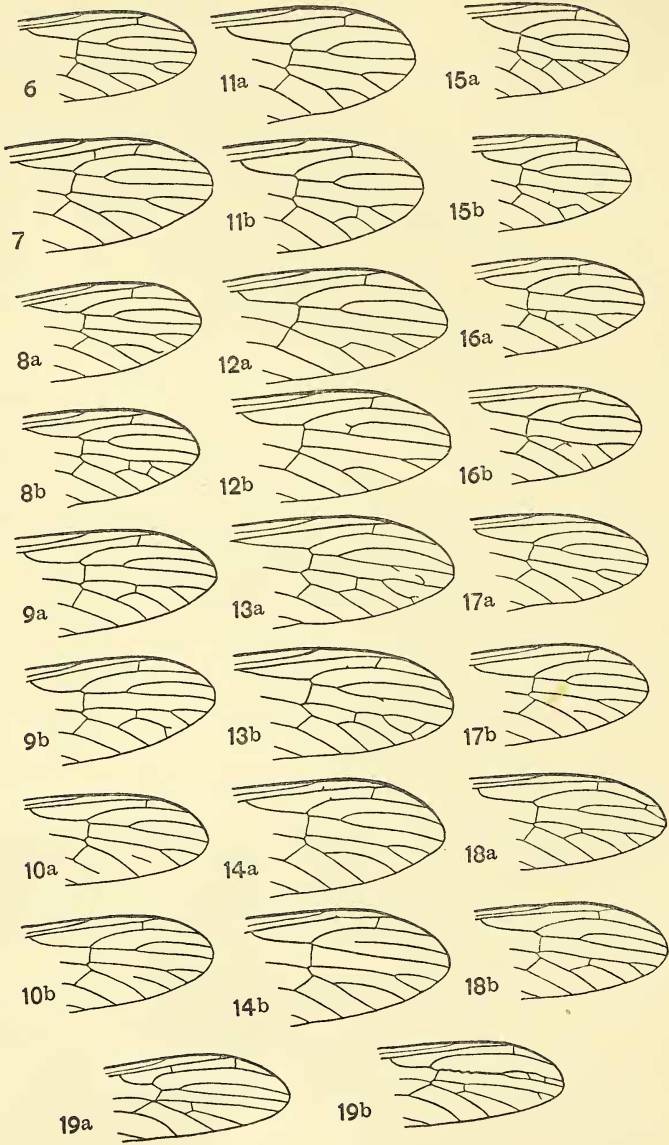
This raises the suspicion that in Britain *T. excisa* may have a sub-apterous female, though in Scandinavia the female is normally winged; in collections from Finland and Sweden both sexes are equally well represented.

Tipula rubripes, Schum. Two males by Loch Rannoch.

Dicranota guerini, Zett. A male on Ben Alder.

Tricyphona immaculata, Mg. This species is usually less subject to venational anomalies than are some others of the genus, in proof of which it will be sufficient to note that the 23 specimens in the British Museum show only normal slight variation, not one of them possessing any anomalous feature such as a broken vein or extra cross-vein. It was therefore not a little surprising to find that, out of 14 specimens of *T. immaculata* taken at Ben Alder as prey of *Empis lucida*, no fewer than 12 were in one way or another abnormal in venation. Seven have a closed discal cell on one or both wings, thus showing more or less resemblance to the allied *T. unicolor*, Schum.; according to Yorkshire specimens in the British Museum, *T. unicolor* differs definitely in the male hypopygium, whereas throughout the present series of specimens (7 ♂) this organ has the normal form of *T. immaculata*. Three of the Ben Alder specimens have vein *M*₃ broken; one has an adventitious cross-vein in the marginal cell (as in the allied genus *Dicranota*); one has the transverse vein *R*₂ unusually near the tip of *R*₁; one has *R*₂ absent on one wing; several have short stumps in different positions. The various peculiarities are shown in the accompanying figures; fig. 6 depicts the normal venation of one of the specimens; where both wings of a specimen are shown, this is indicated by the letters *a* and *b*.

Tricyphona claripennis, Verr. A female taken near Aviemore shows several interesting peculiarities of venation (fig. 19). On both wings the normal cross-vein *R*₂ ends in the costa instead of in *R*₁; on one wing an additional cross-vein is present in the marginal cell, and on the other wing *R*₄ and *R*₅ are fused for half their length, and even on the distal half are approximated and connected by two irregular cross-veins.



Pedicia rivosa, L. All the specimens seen at Rannoch, Aviemore, and Nethy Bridge were of the form with the dark streak along vein *Cu* continued to the wing-margin. Last year I noted the occurrence of this form on the top of Penyghent; perhaps it is mainly a northern or mountain form.

Limonia dilutior, Edw. Common among broom by Loch Pityoulish, also in Glen Nevis. This species seems to be definitely associated with broom.

Lipsothrix errans, Walk., and *L. remota*, Walk. These two species (which have only recently been re-distinguished) occurred together in the ravine in Dunalastair Park, Kinloch Rannoch.

LEPTIDÆ.

Ptiolina atra, Zett. One male in a swampy place by Loch Rannoch.

EMPIDIDÆ.

Empis lucida, Zett. A number of males were taken on Ben Alder carrying prey; they were flying in a small swarm and taken together in the net, the captors being allowed to escape and the dead prey retained and determined as follows: 7 ♂ 7 ♀ *Tricyphona immaculata*, Mg. (the Tipulid noted above); 2 ♂ *Hormomyia* sp. (Cecidomyiid); 2 ♀ *Sciara* sp. (*Mycetophilid*); 2 ♂ 1 ♀ *Empis verralli*, Collin (Empid); 1 ♂ *Melanostoma mellinum*, black var. (Syrphid); 1 small moth (Tortricid).

Hydrodromia wesmæli, Mcq. One male on Ben Alder. This is only the second British record, the first specimen having been taken by Dr J. H. Wood in Herefordshire.

Hydrodromia nivalis, Zett. One male and two females on patches of snow near the summit of Ben Nevis. Another interesting addition to the British list, for the determination of which I am indebted to Mr J. E. Collin.

ANTHOMYIIDÆ.

Limnophora triangulifera, Zett. A series of specimens (1 ♂ 8 ♀) were taken on patches of snow near the summit of Ben Nevis. The flies attracted attention by taking short hopping flights; their activity was most noticeable as almost

all the other insects on the snow were torpid,* while the Anthomyiids seemed quite at home. Mr J. E. Collin has kindly determined the species and confirmed my suspicion that it is an addition to the British list.

Rhynchotrichops subrostratus, Zett. One male in company with the last.

ÆSTRIDÆ.

The deer-bots, *Hypoderma diana* and *Cephenomyia auribarbis*, were both taken in fair numbers around Loch Rannoch by Mr W. H. T. Tams. The flies were found singly, sitting or hovering over moist places on rough roads.

* Large numbers of insects were observed on the snow, mostly Diptera of the following species: *Hormomyia* sp., *Bibio nigriventris*, Hal., *Boletina* spp., *Dicranomyia affinis*, Schum., *Linnophila meigeni*, Verr., *Tipula subnodicornis*, Zett., and some Empids; also some Ichneumonids and Staphylinid beetles. The weather was fine and warm, with very little wind even on the summit; many insects, mostly of the same species as those found on the snow, were rising on the warm air and passing over the top of the mountain. No Æstrids or Tabanids were present.

Wood-Pigeon infested with Cestodes.—When out shooting on the afternoon of the 16th October, at Drumnagair Farm, in the Parish of Marykirk, Kincardineshire, the writer observed a Wood-Pigeon feeding at the edge of a stubble field in close proximity to a young spruce wood. As it made no attempt to fly off on approaching, it was naturally concluded to be wounded. However, when about 25 yards distant, the Wood-Pigeon attempted to fly and at this point it was shot.

The bird, an adult specimen, appeared to be suffering from some internal trouble as it had been scouring badly and the vent and tail feathers were matted with thin excrement. It was also in poor condition and very emaciated.

As a result of a post-mortem examination made on the 19th October, the intestine proved to be heavily infested with cestodes, *Skrjabinia columbæ* (Fuhrmann, 1909), the symptoms being enteritis, inflammation of the intestinal wall, and blood effusions.—D. ROBERTSON, 20th October 1931.